Claim Amendments

In response to the Office Action dated April 9, 2004, please amend the claims of the subject application as follows:

1. (currently amended) A computer-implemented visualization model of similarity relationships between documents comprising:

performing a similarity search in a database based on at least one reference attribute of a at least one reference document to find at least one target document with ~~similar attributes~~ at least one target attribute having a similarity relationship to the at least one reference attribute;

creating a ~~visual representation of the~~ unique visualization model nodes corresponding to the at least one reference ~~database~~ document and the at least one target document;

assigning properties to the unique visualization model nodes including form item, link count, group ID, hidden count, locked, caption, color, hierarchical level, selected and ID;

creating a ~~visual representation of the similarities~~ unique visualization model edges corresponding to the similarity relationships between the at least one reference document and the at least one target document;

assigning properties to the unique visualization model edges including from node, from node ID, to node, to node ID, query list, caption, color, visible, selected and ID; ~~and~~

displaying the ~~visual representations of the database documents and their similarities~~ unique visualization model nodes and the unique visualization model edges on a graphical user interface; and

indicating a degree of similarity between the displayed unique visualization model nodes

by the displayed unique visualization model edges.

2. (currently amended) The method according to claim 1 wherein the at least one target

~~documents~~ document that ~~are~~ is similarity searched reside in a plurality of databases.

3. (currently amended) The method according to claim 1 wherein the similarity search returns a

result set of the at least one reference document, the at least one target ~~documents~~ document, and

similarity relationships between the at least one reference document and the at least one target

document that are used by the visualization model to create the ~~visual representation~~ unique

visualization model nodes corresponding to ~~of~~ the documents and the unique visualization model

edges corresponding to the ~~similarities~~ similarity relationships between the documents.

4. (currently amended) A computer-implemented interactive visualization model of similarity

relationships between documents comprising:

> using a similarity search performed on reference attributes of a reference document which
>
> > results in a set of 0 to n target documents with ~~similar~~ target attributes having
> >
> > similarity relationships with the reference attributes;
>
> creating ~~a visual representation of~~ visualization model nodes corresponding to the
>
> > reference document and each target document;
>
> performing a lookup on a unique nodes list for determining if the created visualization
>
> > model nodes already exists, adding the created visualization model nodes to the
> >
> > unique nodes list if the created visualization model nodes are not on the unique nodes
> >
> > list, and designating the visualization model nodes on the unique nodes list as unique
> >
> > visualization model nodes;
>
> creating ~~a visual representation of~~ visualization model edges corresponding to the
>
> > similarity relationships ~~similarities~~ between the reference document and each target

document;

performing a lookup on a unique edges list for determining if the created visualization

model edges already exists, adding the created visualization model edges to the

unique edges list if the created visualization model edges are not on the unique edges

list, and designating the visualization model edges on the unique edges list as unique

visualization model edges; ~~and~~

displaying the ~~visual representation of~~ unique visualization model nodes corresponding to

the reference documents and each target document and the unique visualization model

edges corresponding to the similarity relationships ~~their similarities~~ on a graphical

user interface; and

indicating a degree of similarity between the displayed unique visualization model nodes

by the displayed unique visualization model edges.

5. (original) The method of claim 4 further comprising allowing a user using the graphical user

interface to initiate the similarity search and select attributes of the reference document to be

used in the similarity search.

6. (original) The method of claim 4, further comprising allowing a user using the graphical user

interface to choose any attributes of the reference document to be used in the similarity search.

7. (original) The method of claim 6 further comprising using attributes of a target document as a

source for a new search.

8. (currently amended) A computer-implemented visualization model of similarities between

documents comprising:

displaying a reference hierarchical object ~~(a reference model node)~~;

allowing a user to initiate a similarity search, based on at least one attribute of the

reference hierarchical object, to find at least one target hierarchical <u>object</u> ~~objects (a~~

~~target model node)~~;

visually representing ~~the~~ <u>a unique visualization model</u> reference ~~model~~ node

corresponding to the reference hierarchical object and <u>a unique visualization model</u>

<u>target node corresponding to</u> the at least one target <u>hierarchical object</u> ~~model node~~

that meet a similarity search criteria;

visually representing <u>a unique visualization model edge corresponding to</u> ~~the similarities~~

<u>a similarity relationship</u> between the reference <u>hierarchical object</u> ~~model node~~ and

each target <u>hierarchical object</u> ~~model node as a model edge~~;

displaying the visual representations of the <u>unique visualization</u> model ~~node~~ <u>nodes</u> and

<u>the unique visualization</u> model edge on a graphical user interface<u>; and</u>

<u>indicating a degree of similarity between the displayed unique visualization model nodes</u>

<u>by the displayed unique visualization model edges.</u>

9. (currently amended) The method according to claim 8 wherein the <u>unique visualization</u> model

node comprises:

a reference to the hierarchical object the model node represents;

a reference to at least one attribute of the hierarchical object used in the similarity search

<u>to determine</u> if a <u>unique visualization</u> model edge exists; and

visual properties of the hierarchical document the <u>unique visualization</u> model node

represents.

10. (currently amended) The method according to claim 8 further comprising storing the visual

representation of the <u>unique visualization</u> reference model node, each <u>unique visualization</u> target

model node, and each <u>unique visualization</u> model edge in computer memory or on disk.

11. (currently amended) The method according to claim 8 wherein the <u>unique visualization</u> model edge comprises:

an identifier of the <u>unique visualization</u> reference model node from which the visual

representation of the <u>unique visualization</u> model edge will extend and an identifier of

the at least one <u>unique visualization</u> target model node to which the visual

representation of the <u>unique visualization</u> model edge will extend; and

a list of the similarity search attributes used in the similarity search.

12 (original) The method according to claim 11 further comprising user chosen attributes to be

used in the similarity search.

13. (currently amended) A computer-implemented method of visualizing similarity relationships

between documents comprising:

using a reference hierarchical document;

performing a similarity search based on user selected attributes of the reference

hierarchical document and determining a result set of target documents comprising 0

to n hierarchical documents;

converting each hierarchical document to a <u>unique visualization</u> model node that visually

represents each hierarchical document to be displayed on a graphical user interface;

~~and~~

using the similarity search results, creating a <u>unique visualization</u> model edge that

visually represents the similarities between the reference hierarchical document and

each hierarchical document in the result set to be displayed on a graphical user

interface<u>; and</u>

<u>indicating a degree of similarity between the displayed unique visualization model nodes</u>

by the displayed unique visualization model edges.

14. (currently amended) The method of claim 13 further comprising displaying the unique visualization model edge, and the unique visualization model node on a graphical user interface.

15. (currently amended) The method of claim 8, wherein each unique visualization model edge indicates a degree of similarity between the reference hierarchical object and the target hierarchical object and is displayed as a line connecting unique visualization model nodes, said model nodes are being depicted as geometric shapes on the graphical user interface.

16. (currently amended) The method of claim 15, wherein the length of the line connecting the unique visualization model nodes varies as a function of the degree of similarity between the reference document and the target document referenced by the unique visualization model nodes.

17. (original) The method of claim 1, wherein the visual representation is three dimensional.

18. (currently amended) A computer-readable medium containing instructions for a visualization model of similarity relationships between documents comprising:

    performing a similarity search in a database based on at least one reference attribute of a at least one reference document to find at least one target document with similar attributes at least one target attribute having a similarity relationship to the at least one reference document;

    creating a visual representation of the unique visualization model nodes corresponding to the at least one reference database document and the at least one target document;

    assigning properties to the unique visualization model nodes including form item, link count, group ID, hidden count, locked, caption, color, hierarchical level, selected and ID;

    creating a visual representation of the similarities unique visualization model edges

corresponding to the similarity relationships between the at least one reference

document and the at least one target document;

assigning properties to the unique visualization model edges including from node, from

node ID, to node, to node ID, query list, caption, color, visible, selected and ID; ~~and~~

displaying the ~~visual representations of the database documents and their similarities~~

unique visualization model nodes and the unique visualization model edges on a

graphical user interface; and

indicating a degree of similarity between the displayed unique visualization model nodes

by the displayed unique visualization model edges.

19. (currently amended) A computer-readable medium containing instructions for a visualization

model of similarities between documents comprising:

displaying a reference hierarchical object ~~(a reference model node)~~;

allowing a user to initiate a similarity search, based on at least one attribute of the

reference hierarchical object, to find at least one target hierarchical object ~~objects (a~~

~~target model node)~~;

visually representing ~~the~~ a unique visualization model reference ~~model~~ node

corresponding to the reference hierarchical object and a unique visualization model

target node corresponding to the at least one target hierarchical object ~~model node~~

that meet a similarity search criteria;

visually representing a unique visualization model edge corresponding to ~~the similarities~~

a similarity relationship between the reference hierarchical object ~~model node~~ and

each target hierarchical object ~~model node as a model edge~~;

displaying the visual representations of the unique visualization model ~~node~~ nodes and

the unique visualization model edge on a graphical user interface; and

indicating a degree of similarity between the displayed unique visualization model nodes

by the displayed unique visualization model edges.

20. (new) A computer-readable medium containing instructions for a computer-implemented

interactive visualization model of similarity relationships between documents according to the

steps of claim 4.

21. (new) A computer-readable medium containing instructions for a computer-implemented

method of visualizing relationships between documents according to the steps of claim 13.

22. (new) The method of claim 1, wherein the visualization model is selected from the group

consisting of a two dimensional link chart visualization, a three dimensional visualization, a

model explorer visualization, a cross database visualization, and a data landscape visualization.

23. (new) The method of claim 4, wherein the visualization model is selected from the group

consisting of a two dimensional link chart visualization, a three dimensional visualization, a

model explorer visualization, a cross database visualization, and a data landscape visualization.

24. (new) The method of claim 8, wherein the visualization model is selected from the group

consisting of a two dimensional link chart visualization, a three dimensional visualization, a

model explorer visualization, a cross database visualization, and a data landscape visualization.

25. (new) The method of claim 13, wherein the visualization model is selected from the group

consisting of a two dimensional link chart visualization, a three dimensional visualization, a

model explorer visualization, a cross database visualization, and a data landscape visualization.